

Witnessable Quantifiers License Type-e Meaning: Evidence from CT, Equatives and Supplements

Reinhart’s (1997) choice-functional account of indefinites holds that the nominals in (1a) can denote plural individuals of type $\langle e \rangle$, while those in (1b,c) only permit classic generalized quantifier (GQ) denotations of type $\langle\langle e,t \rangle, t \rangle$. In this paper, I argue for expanding the class of quantificational DP’s that allow type $\langle e \rangle$ meaning to include those in (1b), using new evidence from contrastive topic marking, equatives and supplements. As a class, the quantifiers that support type $\langle e \rangle$ meaning are WITNESSABLE in that they entail the existence of a witness: $Det(P)(Q) \rightarrow \exists x : P(x) \wedge Q(x)$.

- (1) a. {Some | Three | Several | Many | A few} cats
 b. {Most | All | More than two | Exactly two} cats
 c. {Few | No | Less than three | Not many} cats

English contrastive topics (CT’s) are realized with the distinctive intonation pattern in (2), where the topic *Fred* is pronounced with a rising CT contour, and *Amherst* bears a falling focus (F) contour. Pragmatically, utterances with CT’s are partial answers; they answer a question concerning the CT-marked topic, but fail to answer a salient question about a different topic (Büring 2003).

- (2) A: What about Fred and Mary? Where do THEY live?
 B: [FRED]_{CT} lives [in AMHERST]_F.
 L+H* L-H% H* L-L%

Building on Rooth’s (2005) arguments, I show that CT-marked quantifiers cannot in general be treated using GQ semantics. The basic problem for GQ accounts like Büring 1997 is that a phrase like [SOME_{CT} grads] in (3) sets up contrasts with different pluralities, not different GQ denotations like ‘few grads’. We see one reflection of the problem in B’s follow-up, where one instance of CT-marked *some* contrasts with another. This is unexpected if the two DP’s denote the same GQ.

- (3) A: Where do the grads live?
 B: [SOME]_{CT} grads live [in AMHERST]_F. (And SOME grads live in NORTHAMPTON.)
 L+H* L-H% H* L-L%

With Rooth (2005), I treat CT-marked quantifiers using choice function (CF) variables, rather than classic GQ denotations. Thus, *some* can denote a CF variable—a function of type $\langle\langle e,t \rangle, e \rangle$ that given a property, returns some entity having that property. In this case, the alternatives generated by [SOME]_{CT} grads’ are computed by substituting different choice functions in the position of the CT-marked *some*, giving contrasting pluralities of grads, as needed for evaluating CT meaning.

Looking beyond simple indefinites, I propose that CT-marking can serve generally as a diagnostic for type $\langle e \rangle$ interpretations. In (4a), decreasing quantifiers like *few* fail to license CT intonation, as expected on the view that they lack CF readings, which Reinhart (1997) and others have argued on independent grounds. But surprisingly, the witnessable quantifiers in (4b) which are widely assumed to lack CF readings *do* license CT, indicating that they too can denote $\langle e \rangle$.

- (4) a. # [FEW | Not MANY | Less than ELEVEN]_{CT} grads live [in AMHERST]_F.
 b. [MOST | More than TEN | Exactly TEN]_{CT} grads live [in AMHERST]_F.

Further support comes from sentences equating two pluralities, as in (5). In this frame, a GQ object is unlicensed, since its nuclear scope would be the property λx [those people are x], which is unsatisfiable by atomic individuals. By contrast, if the object denotes a type $\langle e \rangle$ plurality, the

sentence will be licensed along the lines of typical equatives like “Cicero is Tully”. Examples like (6) which seem to be exceptions to the pattern in (5) are shown using diagnostics from Mikkelsen (2004) to be specificational clauses where the subject denotes a property, not a plurality.

(5) Those people standing over there are {some | most | #few} of my best students.

(6) The winners of last night’s election were {none | few} of the people I would have expected.

The third type of evidence comes from supplements, including nominal appositions and non-restrictive relatives. Supplements add parenthetical information about the phrase they anchor to, and their contribution is detached from the rest of the composition process (Potts 2005). In (7), a GQ-denoting subject would have no way of composing directly with the type $\langle e \rangle$ supplement ‘the junior ones’. Even if we allow shifting of the supplement to a property type, the truth conditions still come out wrong; the supplementing proposition would be just that some congressmen are junior, and we would have no way of ensuring that these are the *same* ones who admire Kennedy. On the other hand, if the anchor in (7) contains a CF, then it denotes a particular set of congressman, and the supplement will be equated with the same set that the main clause predicates over.

(7) {Some | Most | #Few} congressmen, (namely) the junior ones, admire Kennedy.

Contrastive topic, equative and supplement constructions all resist GQ-denoting nominals on semantic grounds, and remarkably, these three frames all make the same empirical cut across the class of quantifiers. The fact that all and only witnessable quantifiers survive these contexts is evidence that these quantifiers support non-GQ readings, and type $\langle e \rangle$ readings in particular. However there is a concern for this approach. If the way quantificational DP’s denote individuals is via choice-function semantics, we predict that all witnessable quantifiers will show exceptional wide scope behavior. While quantifiers like *most* do not typically scope out of islands (suggesting additional restrictions on where type $\langle e \rangle$ readings are available), a range of examples indicate that they do at least have this potential. Suppose ten individuals are competing for a single cash prize, and I ask each contestant what they’ll spend the money on if they win. I can report my findings with (8), where *most* scopes out of the *if*-clause. By comparison, *few* can only scope low, giving a reading where multiple-winner scenarios are considered.

(8) If {MOST | #FEW} of them win, they’re going to give the money to charity. [one winner]

Overall, the new data discussed here provide support for accounts that share with Reinhart 1997 the feature of distinguishing quantifiers of two different semantic types, over accounts of exceptional wide scope that do without this type distinction (Winter 1997, Brasoveanu and Farkas 2011 and many others). At the same time, these data point to a revision of Reinhart’s specific proposal that achieves the goal of predicting which quantifiers allow CF readings from semantic principles.

References — Brasoveanu, A., and D. Farkas. 2011. How indefinites choose their scope. *L&P* 34. Büring, D. 1997. The Great Scope Inversion Conspiracy. *L&P* 20. Büring, D. 2003. On D-trees, Beans, and B-accent. *L&P* 26. Mikkelsen, L. 2004. Specifying Who: On the Structure Meaning and Use of Specificational Copular Clauses. UC Santa Cruz PhD thesis. Potts, C. 2005. *The Logic of Conventional Implicatures*. OUP. Reinhart, T. 1997. Quantifier Scope: How Labor Is Divided between QR and Choice Functions. *L&P* 20. Rooth, M. 2005. Topic Accents on Quantifiers. In *Reference and Quantification: The Partee Effect*, eds. G. Carlson and F. Pelletier. Stanford: CSLI. Winter, Y. 1997. Choice Functions and the Scopal Semantics of Indefinites. *L&P* 20.